



User Manual

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1. Introduction

The MtrackScout GPS Tracking Device is the most advanced and economical diagnostic device for communicating vehicle information to the GSM/GPRS networks. With an integrated high sensitivity GPS receiver, the MtrackScout provides the fundamental functions with optional advanced features for tracking light trucks and passenger vehicles in need of monitoring location, speed, and many other codes available on the OBD port of the vehicle.

1.1. MtrackScout OBD-II Compliant

OBD-II is a standard that was created by SAE (Society of Automotive Engineers) in the early 1990s. However, some vehicles do not follow this standard. Therefore MtrackScout cannot guarantee the OBD-II performance of the MtrackScout with every vehicle. For more information about MtrackScout's OBD-II compliance, please refer to MtrackScout OBD-II Compliance Guide document.

2. Hardware Features

2.1. OBD-II Protocol

There are five signaling protocols that are permitted with the OBD-II interface. Most vehicles have been issued with only one of the protocols. The MtrackScout features a superior protocol detection algorithm that ensures the device connects reliably even to vehicles that do not fully conform to the OBD-II standards. The MtrackScout supports all legislated OBD-II protocols below:

- J1850 PWM (Ford vehicles)
- J1850 VPW (GM vehicles)
- ISO9141-2 (Asian, European, Chrysler vehicles)
- ISO 14230-4 KWP
- ISO 15765-4 CAN (11/29 bit ID, 250/500 Kbaud)

2.2. Micro USB Connection

The Micro USB can supply power to the MtrackScout device for parameter setting or firmware upgrade purpose. When micro USB is connected to your laptop/PC and mains power is not applied, the OBD-II and GSM/GPRS functions will be turned off temporarily. This function is used by MtrackScout technical support staff.

2.3. Buzzer

The internal buzzer of the MtrackScout can be configured to be triggered by any number of events (speeding, excessive idling, harsh braking or acceleration and RPM). The buzzer also indicates the operational status of the MtrackScout explained in section 3.5 of this manual.

2.4. Power Supply

The MtrackScout device connects to the OBD-II SAE J1962 connector of the vehicle and draws power from the OBD port. No additional power cabling is required for operation.

2.5. LED Indication

The following table describes the LED operation of the MtrackScout:

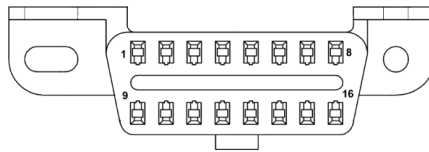
LED Indicators	Color	LED Status	Description
GSM	Green	<ul style="list-style-type: none">• OFF:• Flash:• Flash:• Flash:• ON:	<ul style="list-style-type: none">• GSM module OFF or Error• No SIM Card, Searching networks (0.25sec ON 0.5sec OFF)• GSM registered (0.5sec ON 0.5sec OFF)• GPRS connecting (0.25sec ON 0.25sec OFF)• Socket session online (connect to Gateway Server)
GPS	Orange	<ul style="list-style-type: none">• OFF:• Flash:• ON:	<ul style="list-style-type: none">• GPS module OFF or Error• Searching GPS signal• GPS fixed
Power	Red	<ul style="list-style-type: none">• OFF:• Flash:• ON:• ON:	<ul style="list-style-type: none">• Power OFF• Power ON• OBD Data Connected (ON 3 seconds and OFF 1 second)• Vehicle heading calibrated (G-sensor calibration done)

3. Installation

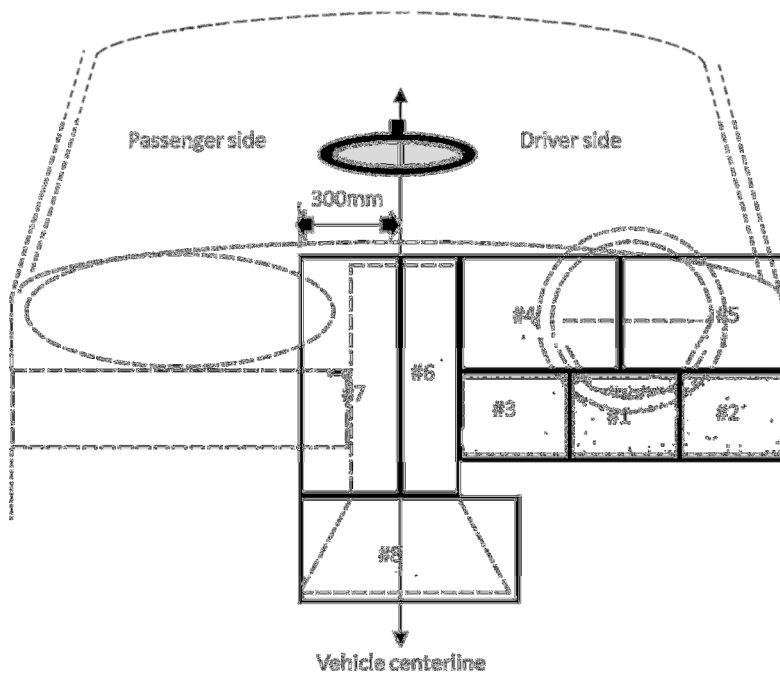
MtrackScout is designed for easy Plug & Play installation. Just find the DLC connector of your vehicle and plug MtrackScout in to the port.

3.1. What is the OBD-II DLC Connector

The OBD-II DLC connector is a standard connector for all vehicles which are OBD-II compliant. Almost all vehicles manufactured in 1996 or later are OBD-II compliant. The OBD-II DLC connector is shown below:

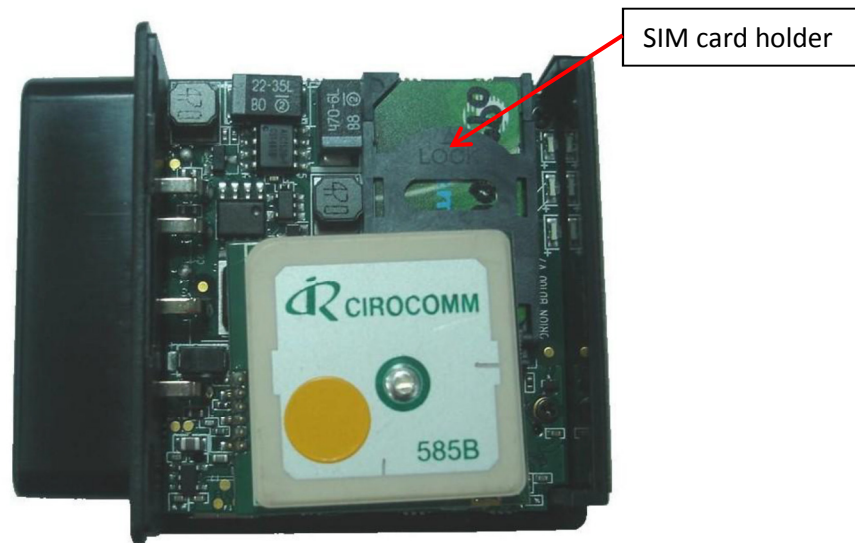


The OBD-II DLC connector is most commonly found underneath the dashboard on the driver side. See the following figure for DLC location for most vehicles. Location #1-#3 is under the dashboard of the driver side. Location #4-#5 is on the dashboard instrument/gauge area. Location #6-#7 is near radio and climate controller. Location #8 is near the armrest and handbrake area.



3.2. SIM Card Access

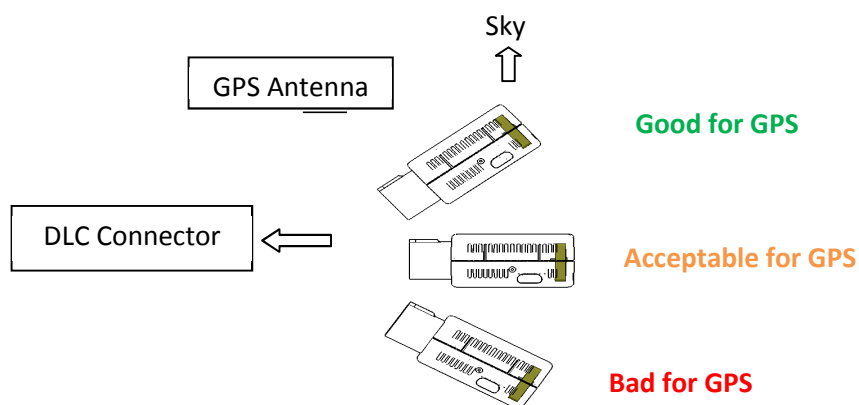
Remove the top cover of the MtrackScout by pressing down on the front center of the top cover and pulling back. Insert the SIM card into the SIM card holder. Please note that the security PIN must be disabled on the SIM card before inserting it into the MtrackScout unit. This is done by inserting the SIM card into any phone and navigating to the security settings menu and disabling the PIN code on the SIM card.



3.3. GPS Performance for Installation

The MtrackScout determines its position by communicating with Global Positioning Satellites (GPS). The accuracy of the GPS location will have a lot to do with the overall performance of the GPS receiver. The MtrackScout device has an internal GPS antenna and the following interior conditions may cause bad GPS reception:

- Your vehicle has a metallic window tint
- Your vehicle has a windshield mounted radio antenna
- Your vehicle has a solar reflective window
- The AX5 installation direction should be considered as well. Please see the following figure:



The MtrackScout uses the latest GPS technology which accelerates GPS positioning by capitalizing on the periodic nature of GPS satellite orbits. GPS orbit predictions are directly calculated by the GPS receiver and no external aiding data or connectivity is required.

3.4. Simple Verification of Installation

When the device is configured and first plugged into the OBD port. The MtrackScout will have some buzzer

indications for basic function test. The user can simply to verify if the MtrackScout device is installed properly.

Buzzer Indication	Description
Beep 1 time	Device Power ON
Beep 2 times	OBD Protocol Connected
Beep 3 times	GSM/GPRS Connected
Beep 4 times	GPS Fix

3.5. Security

Once the unit is installed the flashing LED lights might be visible due to the location of the OBD-II DLC connector on the dash board. If this is the case we suggest that the LED lights are covered / concealed by sticking a piece of black tape over the LED lights.

- LED Lights are visible after installation.



- Cover the LED lights with a piece of black sticky tape.



- After applying the black sticky tape the LED Lights are no longer visible when active in the vehicle.



4. Appendix

4.1. Hardware Specification

MtrackScout		
GSM/GPRS Specification		
GSM Module		Quad band (850/900/1800/1900MHz)
Communication		SMS/USSD/GPRS /TCP/UDP
GSM Antennas		Internal Type
GPS Specification		
GPS Receiver		50 Channels, L1 Band, C/A Code
Sensitivity		-159dBm
Accuracy		2.5m CEP
Assisted GPS		Supported
OBD-II Specification		
Supported Protocol		ISO 15765-4 (CAN) ISO 14230-4 (KWP2000) ISO 9141-2 (Asian, European, Chrysler vehicles) SAE J1850 VPW (GM vehicles) SAE J1850 PWM (Ford vehicles)
Electrical Characteristics		
Power Source		8-20 VDC
Power Consumption	Operation	140 mA @ 12VDC (Average)
	Sleep	18 mA @ 12VDC
Deep Sleep		<2 mA @ 12VDC
Mechanical Specification		
Dimension		50 x 46 x 25 mm
OBD Connector		SAE J1962 Type A
Weight		54g (Include OBD Option)
Environmental Characteristics		
Operation Temperature		-25 ~ +70°C
Storage Temperature		-40 ~ +85°C
Humidity		5 ~ 95%

4.2. FCC Regulations

- This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

- This device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
 - Reorient or relocate the receiving antenna.
 - Increase the separation between the equipment and receiver.
 - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

4.3. RF Exposure Information

This device meets the government's requirements for exposure to radio waves.

This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. In order to avoid the possibility of exceeding the FCC radio frequency exposure limits, human proximity to the antenna shall not be less than 20cm during normal operation.